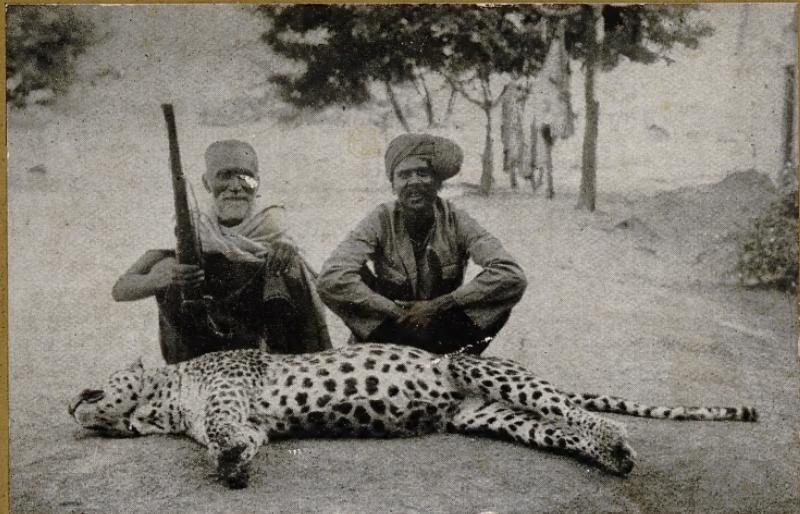


THE PRESERVATION
OF
SHIKAR TROPHIES

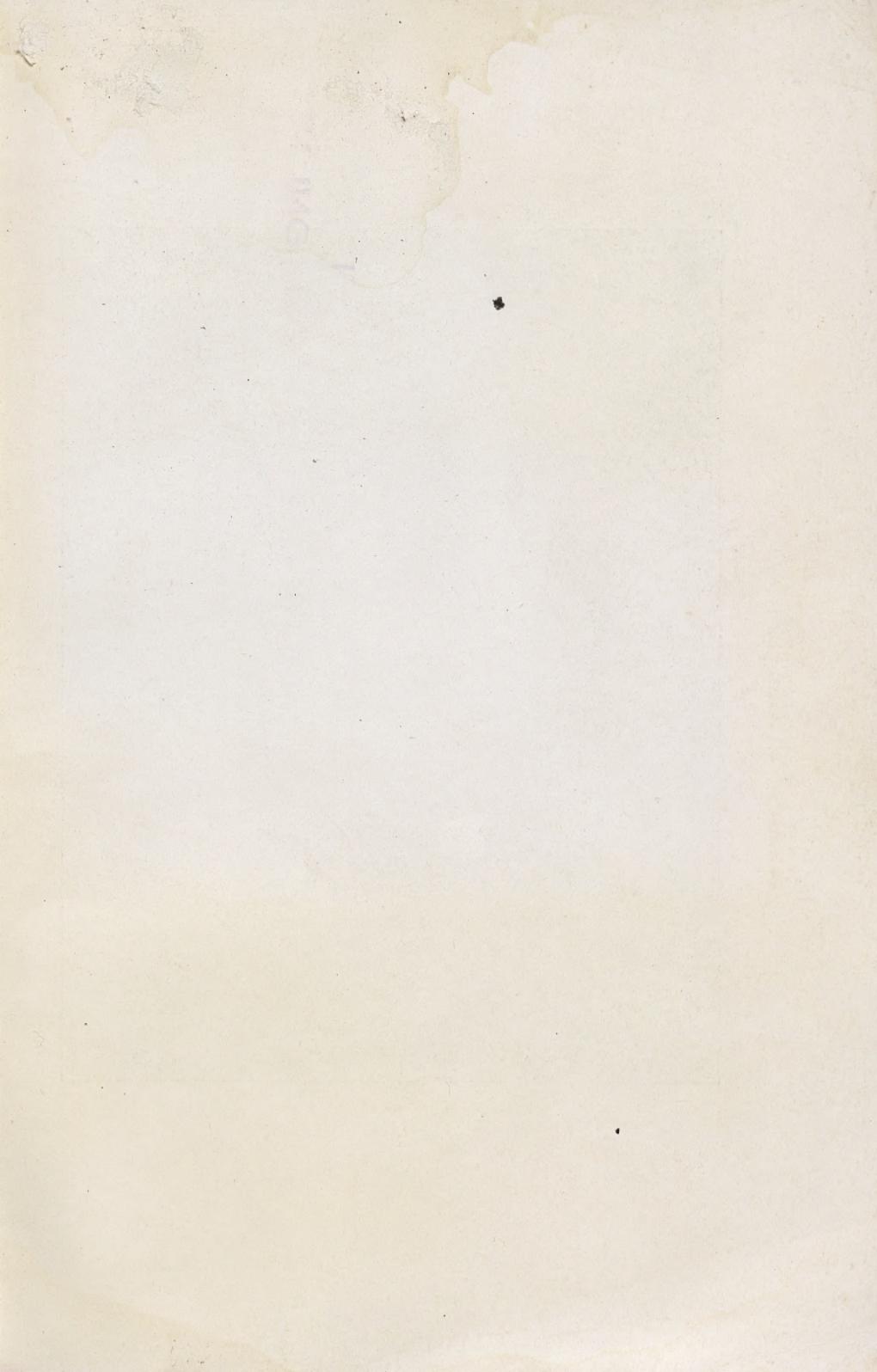


VAN INGEN AND VAN INGEN
ARTISTS IN TAXIDERMY
MYSORE

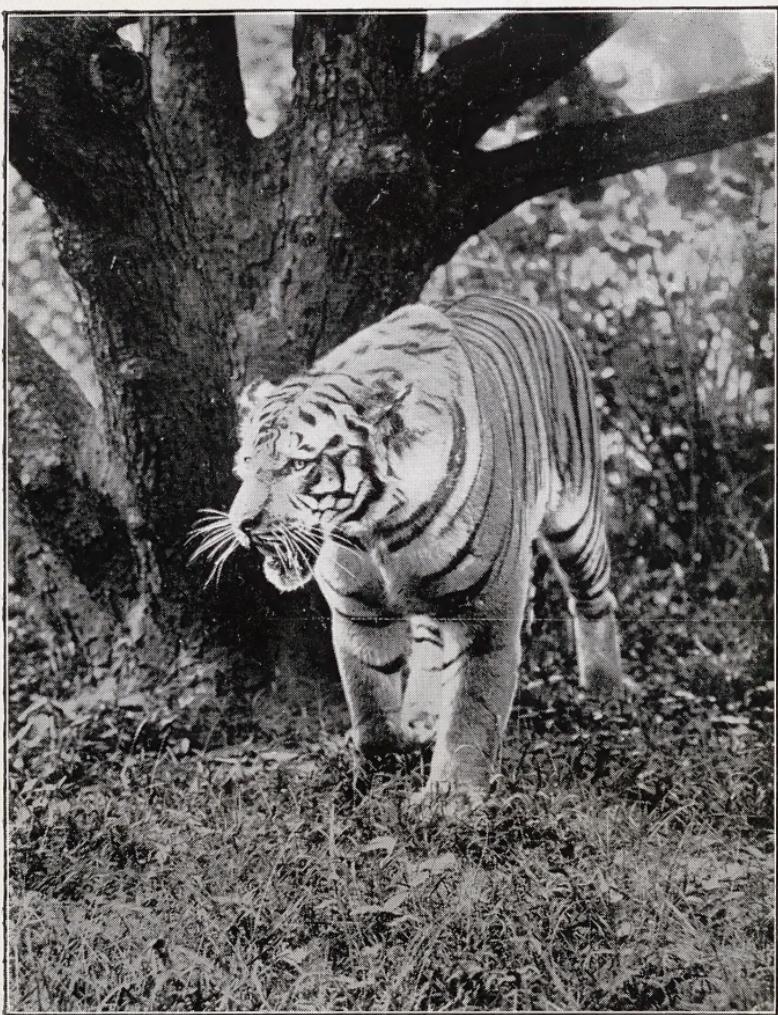
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van Ingen & van Ingen

ARTISTS IN TAXIDERMY

MYSORE

Five Gold and Three Silver Medals

MYSORE

PRINTED AT THE WESLEYAN MISSION PRESS

1929



PREFACE

These notes were originally compiled in an abridged form, more than twenty years ago, in response to frequent requests for information regarding the correct methods of the preservation of Shikar trophies in the field.

The treatment of fresh skins and masks is very simple, but the sportsman must give his personal attention to the skinning, preserving and drying, and not depend entirely on his native shikari. It is essential that skins and masks be in perfect condition if the finished trophies are to be a success. Sportsmen should realise this, as the taxidermist cannot be expected to work wonders.

When a skin has been dried in the hot sun or near a fire, or hair slips from the lips and ears, or the eye rims have been cut away, the most skilful handling cannot rectify the damage.

We trust the perusal of the ensuing notes will help to save many a valuable trophy, and we are confident that if the directions laid down are followed, success in every instance will be assured.

*January, 1928,
Mysore.*

VAN INGEN AND VAN INGEN.

CONTENTS

CHAPTER I

	PAGE
SKINNING A TIGER—Forelegs, hindlegs, the incisions, the lips, the nose, the eyes, the pads ; Bullet holes ; Clotted blood	9

Incisions for Bear ; Stripping Bear, Bear Cub and Monkey

—Crocodile, Snakes

CHAPTER II

SKINNING HEADS—Bison, eyepits ; Elephant masks, Wild Sheep masks ; Incision for Muntjac	29
Stretching skins—Entire Specimens—Knives—Drying skins in the hot sun—Processions—The Chamar	35

CHAPTER III

SKULLS AND SKELETONS	41
---------------------------------	----

CHAPTER IV

PRESERVATIVES—Salt, alum, pickle, carbolic acid, arsenical soap, Atlas, wood ash	45
---	----

CHAPTER V

APPLICATION OF PRESERVATIVES—Salting process, alum, salt, carbolic, pickle, arsenical soap, carbolic acid, wood ash—Burnt alum, saltpetre—Salting Bison hides—Crocodiles and Snakes	49
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CHAPTER VI

PRESERVATION OF MASKS—Elephant, Pig—Cutting off masks—Elephant feet, Bison and Buffalo legs ..	56
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Never, under any circumstances, dry a skin in the hot sun or near a fire, or pack skins treated with wood ash, arsenical soap or carbolic, till they are thoroughly dry.

CHAPTER I

SKINNING A TIGER

To skin an animal make an incision from chin along belly to tip of tail, then from paw to paw across the chest, and deal similarly with the hindlegs.

Too much cannot be said regarding the importance of these incisions. If they are done any way, the appearance of the skin will be completely wrecked.

We shall now describe the stripping of a TIGER. The same method should be employed for every animal, and the several illustrations will shew the importance of the incisions better than they can be described.

Place the carcase on its back, and make an incision through the chin—not the corner of the mouth—and carry it along the centre of the throat to the chest. There is a whorl of hair which runs from the chest along the belly to the vent. If the incision follows this whorl of hair there will be no mistake, for it is exactly in the middle of the white of the belly. Then carry the incision along from the vent to tip of tail.

FORELEGS

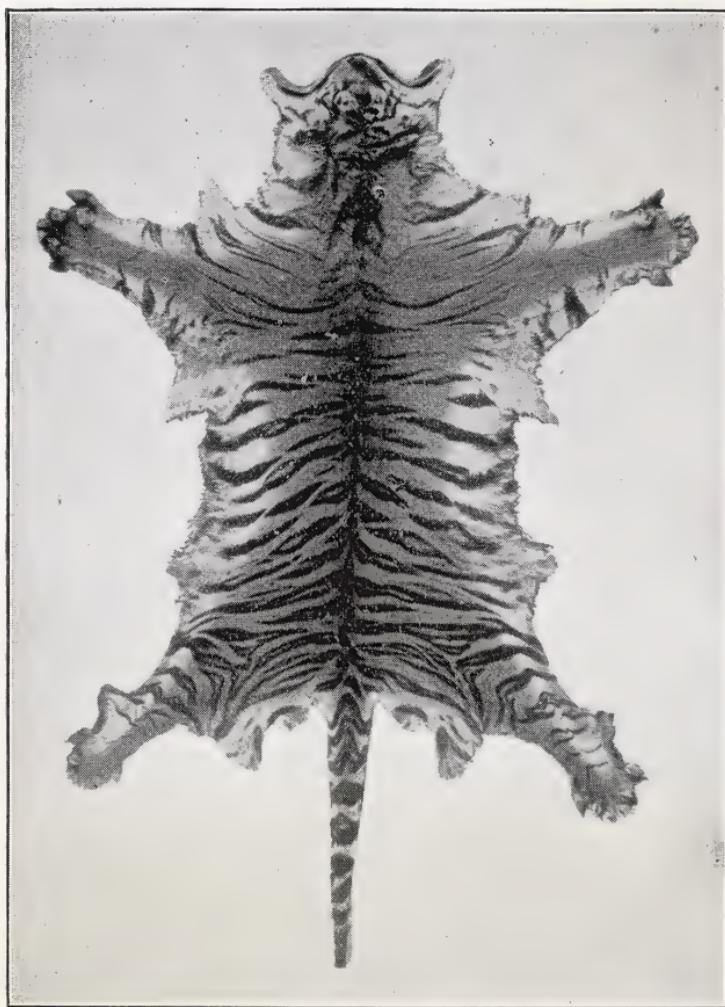
After cutting through the ball of the pad the incision must be made exactly through the centre of the white till it reaches the incision which is made from chin to tip of tail, the other foreleg is treated in the same way, both these incisions should meet on the chest, and not end one above the other.

HINDLEGS

After cutting through the ball of the pad the incision runs behind the leg to the end of the calcaneum, then turns inside the thigh, keeping in the middle of the white (*vide* Fig. A). The other hindleg, of course, must be done in the same way.



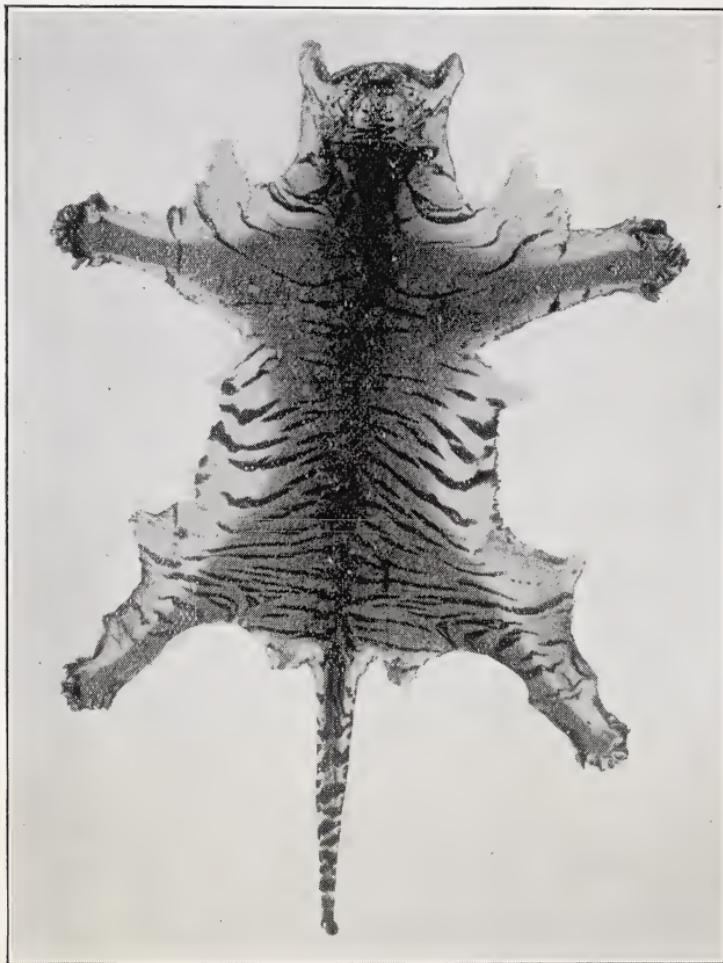
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AA



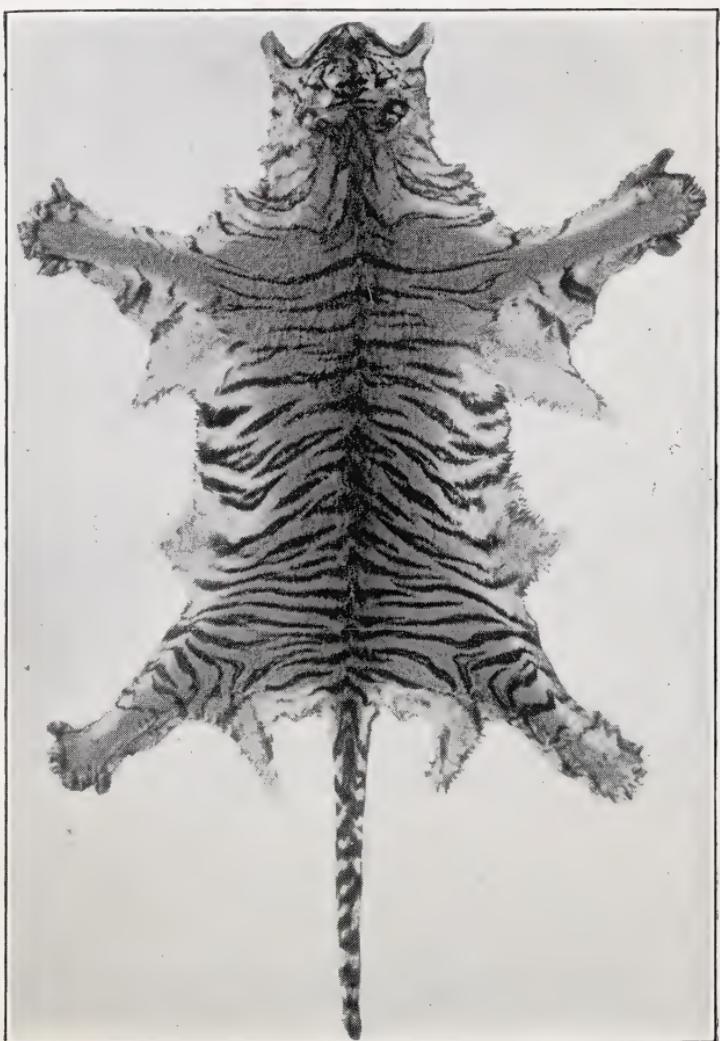
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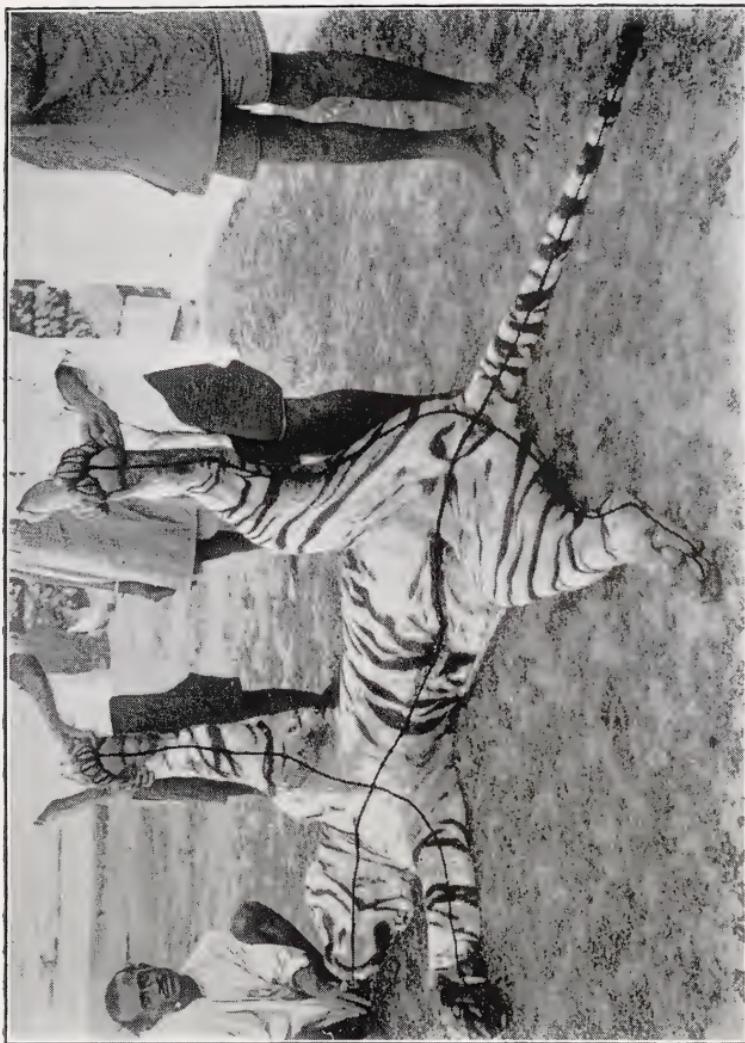


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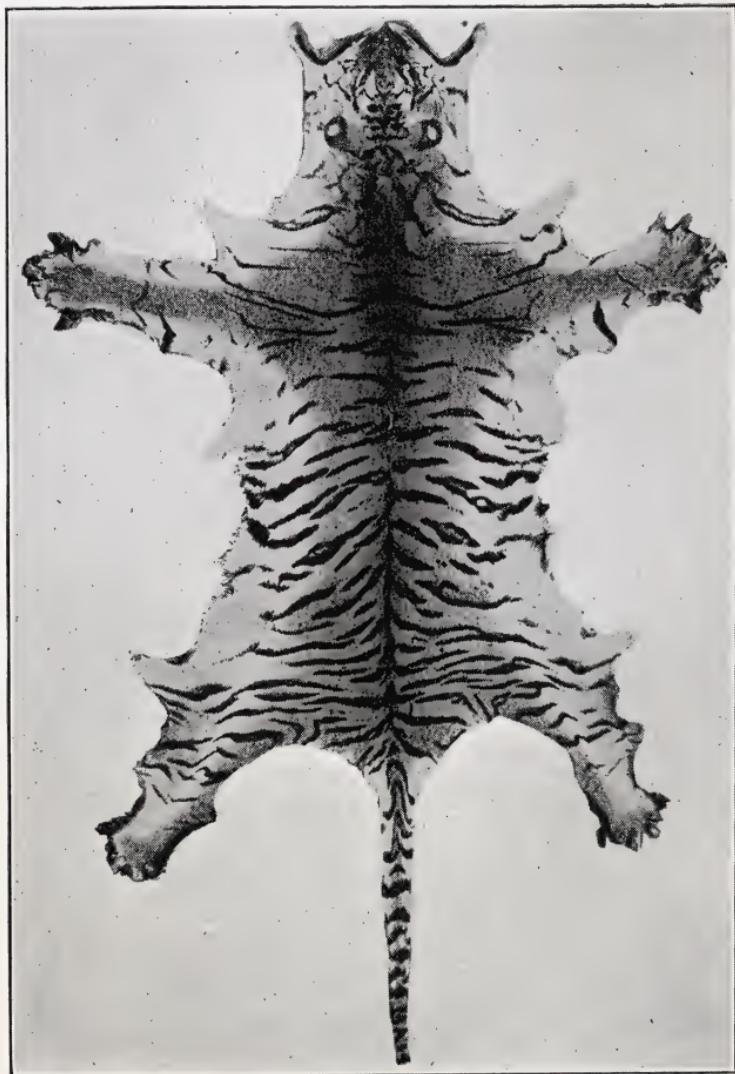


C





D



DD

THE INCISIONS

The illustration A shews the incisions just described, and also the skin after being stretched (AA). It will be observed that the skin is in perfect shape, with the white evenly distributed.

In illustration B the incision has been made from the ball of the pad to the elbow, and under the armpits to the chest, resulting in all the white being above the forelegs, and ruining the appearance of the skin (BB).

In illustration C the incision has been made too high on the forelegs and also the hindlegs, and all the white comes below. *Vide* Fig. CC. If anything, this is a worse mistake than Fig. BB.

In illustration D the incisions of the forelegs have been fairly well done, but the skin has been ruined by the incision on the hindlegs being made much too far back. Fig. DD.

We frequently receive freshly killed tigers and panthers, and, although our skinners are experts, we have all the incisions first marked with charcoal before the skinning is carried out.

It is best to skin a tiger as soon as possible after being killed, for the skin can then be easily removed ; if, however, it is shot late in the evening, no harm will happen should the skinning be postponed to next morning, for skinning by lamp-light is difficult, and a good deal of fat and flesh is bound to be left on the skin, which means a considerable amount of unnecessary work for the next day.

The carcase should be opened and the entrails removed, after which it is turned over for the blood to run out. The inside wiped dry with straw, and small sticks placed across to keep the sides apart, with the object of the cavity being well aired. Do not use any water.

You generally start skinning from the belly, and if there are several skinners available they can be put on to the pads ; otherwise, after the belly is skinned, the man does the pads.

The muscular coating of the stomach is always covered with a thick layer of fat, which adheres to the skin, but

with the least bit of care the skin can be removed with little or no fat on it.

After the pads have been skinned and turned back, also inside of thighs and belly, there is not much need for the knife, as the skin ought to be removed by what butchers term 'fisting.' *Vide Fig. 2.*

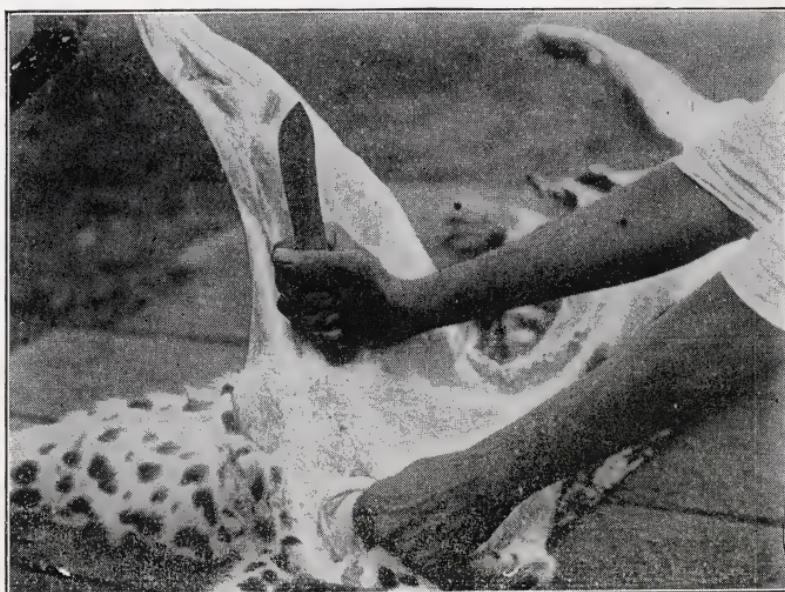


FIG. 2

Get someone to hold the leg to keep the carcase rigid, when the Skinner pulls the skin taut with his left hand and, with his right fist clenched, presses vigorously on the skin close to the flesh, and practically peels it off the carcase. If bits of parchment or flesh show a tendency to cling to the pelt, it is worked loose with the thumb nail or knife, and pushed against the carcase and the fisting continued. In this way the body skin can be removed without any flesh adhering to it, and saves much time and labour later on.

The mask cannot be stripped as clean as the body skin,

for thin layers of flesh adhere firmly to the pelt around the ears and top of the head, which cannot be detached while skinning.

Cut the base of the ear close to the skull, and continue the skinning till the eyes are reached. The forefinger should be inserted in the eye-lids, to make sure the rims of the eyes are not cut. *Vide* Fig. 3. The inside corners of



FIG. 3

the eyes are firmly attached to the bone, and should be carefully detached. Both the upper and lower lips are cut close to the gums, and the cartilage of the nose cut across as close to the nostril as possible.

The whole skin will now come off the carcase except the tail.

The tail is always full of fat, and it is difficult to remove the skin clean. There will be a certain amount of fat attached to the pelt.

THE LIPS

In life the tiger's lips are thick and fleshy, but the actual skin itself is very fine and thin, the thickness being due to the mass of muscle and flesh between the mucous lining and the skin.

The mucous lining is the smooth black skin inside the lips. In ruminants the mucous lining is covered with papillæ.

The mucous lining as well as all the flesh must be cut away, which will result in the roots of the whiskers being also cut, when they will drop off.

It is most essential that every scrap of flesh is removed from the skin of the lips, otherwise the preservative cannot strike through to the hair roots.

There is no advantage in keeping the whiskers on the skin ; as a matter of fact, when the animal has been shot the whiskers should be removed at once to prevent pilfering.

Each whisker is embedded in a small muscular sack. These sacks are in regular rows. If the whiskers are to be left on the skin all the flesh and muscle between the rows must be cut away. It is tedious work and not worth it, for when the skin goes to the taxidermist the first thing he does is to remove the whiskers to prevent loss in handling.

THE NOSE

All the cartilage and the flesh of the nose must be cut away till just the skin is left.

THE EYES

The eye-lids have also a mucous lining, but this mucous lining must not be cut away completely, for when the head is mounted, the part between the mucous lining and skin has to be filled with composition to give the eye-lids their natural thickness.

Hold the eye-lid between the forefinger and thumb, and pass the edge of the knife carefully between the mucous lining and skin, till the eye rims are reached, which will expose the roots of the hair of the eye-lids.

THE EARS

From many letters we have received, the beginner apparently finds the ears to be the most difficult part of the mask to deal with.

The ear consists of tough cartilage, covered on both sides with very thin skin, which does not adhere to the cartilage firmly.

With tiger, panther, bear, and in fact every animal which has the inside of the ear full of hair, the cartilage has to be removed completely, otherwise all the hair inside the ears will fall out. There is no other method of saving this hair. The removal of the cartilage is quite a simple matter. The beginner has only to persevere for once, and he will soon discover how easy it is.

The skin is peeled off the cartilage with the fingers, as in Fig. 4, till the ear is turned completely inside out, and skinning continued till the edge of the cartilage is seen, which is then held with the fingers of the left hand, and the inner skin of the ear peeled off. Fig. 5. Fig. 6 shews



FIG. 4



FIG. 5.



FIG. 6.

the inner skin of the ear being peeled off the cartilage, and Fig. 7 the cartilage after removal in one entire piece, also the skin of the ear.

If your chamar thinks he can remove the cartilage successfully in his own particular way, well, let him do so ;



FIG. 7

it does not matter how it is done, provided the cartilage is completely removed and the skin of the ear not torn.

There is another way of doing the ear. Place the ear on a board, and, with a screw-driver or the back of a spoon, press against the cartilage, and work the screw-driver or spoon about and thus gradually detach the skin from the cartilage. The skin can in this way be detached right up to the edges of the ear. The ear is then inverted, and the skin pulled further back with the thumb nail till the edge of the cartilage is seen.

THE PADS

Figs. 8 and 9 shew the incisions for the pads. Only the last bones on the phalanges are left on the skin, these are



FIG. 8

FIG. 9



FIG. 10



the bones which form the cores, as one might say, of the claws. Fig. 10 shews the pad after being correctly skinned.

The skin must now be spread, and every scrap of fat and flesh carefully removed, for it is not possible for any preservative to strike through the pelt when fat and flesh covers it.

BULLET HOLES

All bullet holes and knife cuts should be sewn, even large bullet holes can have their edges drawn together and sewn when the skin is fresh and full of elasticity, and save unsightly patches later on.

CLOTTED BLOOD

Clotted blood should not be allowed to dry on the hair, as it is very difficult to remove and often leaves an ugly stain on the finished skin. The blood should be sponged off with brine or carbolic acid solution, but on no account should the skin be put into water to wash away the blood. It is a most risky thing to do, for a fresh skin contains nearly 70 per cent. of moisture, and your object is to get rid of this as quickly as possible, and not add to it and allow room for bacterial action.

Patches of clotted blood on the flesh side of the skin must be scraped off thoroughly, as it is liable to retard the action of the preservative.

Incisions for Bear

The horse-shoe in the bear varies in size. It is sometimes small, but as a rule extends right across the chest and up the side of the neck. When making the incision for stripping the forelegs no notice should be taken of the horse-shoe—the incisions should be made as in Fig. A, when part of the white will be seen above as well as below the arm. If the incision is made so that all the white goes above the arm, the shape of the skin is ruined.

Stripping Bear, Bear Cub, and Monkey

To strip a bear, bear cub or monkey which is intended to be mounted entire in an erect position, the incision must

not be made in the usual way, as the hair on the belly of these animals is scanty, and it is difficult to hide the seam in the mounted specimen.

The incisions should run from between the ears along the back of the neck and spine to base of tail, and for the forearms the cut should start below the scapular or shoulder blades to the elbow, then under the forearm to the wrist, then under paw or palm and very far back on the hindlegs, so that when the animal is mounted the seam will not be visible.

Crocodile

If the crocodile hide is required for leather, only the belly portion is removed with the skin of the throat and a few inches of the tail. The legs, known as flippers in the trade, are of no value, and should be cut away completely.

If, however, the crocodile is intended to be set up ENTIRE, the incision to strip should run from the chin along belly to tip of tail, and two lateral incisions should be made—one across the chest from the centre of each foot and the other similarly inside the hindlegs. The head cannot be skinned, but every particle of flesh should be carefully removed from the skull, and the tongue cut clean away, and an incision then made lengthways in the palate will facilitate the removal of the eyes and the cleaning out of the eye sockets. The feet should be skinned right up to the nails. Each of the denticated crests on the tail, which are thick and fleshy, should be held between the fingers and the point of the knife worked well in. If this is not done the scales will come away, and the appearance of the tail will be ruined. Then remove every particle of flesh and fat thoroughly.

Snakes

The skin should be drawn off after an incision has been made along the belly, from chin to tip of tail. The head and also near the vent have to be carefully skinned.

Apply a little arsenical soap and press the skin against a wall, to which it will adhere and drop off when dry.

The above applies to the common snakes. The skin of a python will not come off so easily, and a knife must be used to strip it. The skin should be pegged out to dry.

CHAPTER II

SKINNING HEADS

We frequently receive masks, even of such large animals as BISON, BUFFALO, SAMBUR and NILGHAI, in which the skull has been removed through a small opening on top of the head. To strip a mask in this manner necessarily takes much time and labour, and it is just time and labour wasted, for a large percentage of such masks are only fit to throw away.

The correct way to skin heads with horns is to make an incision right along the back of the neck till the horns are reached. Then carry the incision right and left around the base of each horn, when the mask can be removed quite easily.

BISON

We shall now deal with a BISON (Gaur) HEAD, one of the finest trophies obtained in this country, and difficult to handle owing to its size; but heads of every description, large or small, must be skinned in exactly the same way.

The black line in Fig. 11 shews the incision to be made along the back of the neck and around base of the horns.

Skin the back of the neck first as far as it will go, and cut the ear close to the skull.

To cut around the base of the horn plunge the point of the knife edge upwards into the skin at an angle of about 20° and lift the handle, using the bone as a fulcrum. In this way a clean cut can be made around the horn. There will be some difficulty where the base of the ear and back of the horn meet, but the same method of cutting must be adopted, otherwise it will result in this part of the skin having a badly jagged edge.

When cutting round the front of the horn the hair should be pushed back, to make sure no bit of skin with hair is left on the horn, more especially with stag heads,



FIG. 11
THE BLACK LINE SHOWS THE INCISION



FIG. 12
PART OF THE BACK OF THE NECK STRIPPED



FIG. 13

BACK OF NECK AND PART OF FACE STRIPPED

The eyes, as well as the cartilage of the nose, must be skinned in exactly the same manner as described in skinning a tiger's head.

As there is no hair inside the bison ear there is no necessity to remove the cartilage completely, but the back of the ear has to be skinned right up to the edges. *Vide Fig. 14.*

The pelt in places is over an inch thick; the skin of the lips is, however, comparatively very thin and fine.

The mucous lining (which is covered with papillæ) and all the flesh have to be cut away till the pelt is reached, and every bit of cartilage from the nostrils must be removed, taking the precaution not to injure the skin of the muffle. There will be a good deal of flesh left on the mask, especially round the base of the ears, side of face and back of neck, every scrap of which must be removed. The knife must also be passed through the dewlap, and the skin opened out.

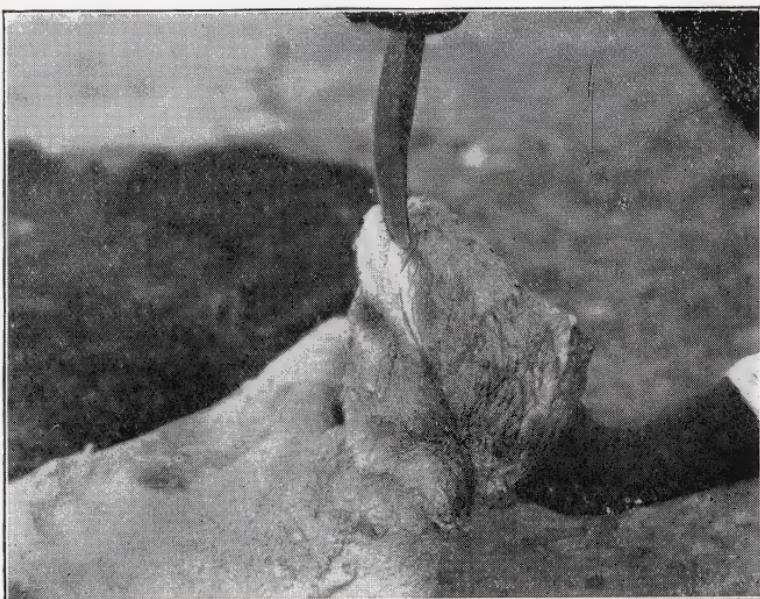


FIG. 14

The grain of the bison hide is remarkably coarse, almost as coarse as the elephant's, and if the fleshing has been properly done the preservative will strike through very quickly.

EYE-PITS

With stag heads, after skinning the eye, the eye-pits have to be dealt with. There is no hair on the skin of the eye-pit, which is very thin and soft. This must not be injured while stripping.

With antelope there is the gland below the eye—the sub-orbital sinus—which should on no account be injured in skinning. After removing the mask, place the tip of the forefinger (hair side) into the small opening of the gland, turn the mask over the hand, and pare away the gland till just the skin is left.

In cutting off heads for mounting, a common mistake is to leave too much skin at the back of the neck and too little in front. The mask should be removed with all the neck and plenty of the chest skin.

ELEPHANT MASKS

We occasionally receive the skull and mask of an elephant, the mask being removed in two or more pieces. No time or labour is saved in removing the mask in this way, and it is most difficult to hide the seam in the finished trophy.

To skin the head of a tusker is rather an undertaking. It just depends on the position of the carcase ; if, however, the sportsman is provided with block and tackle, it does not matter how the carcase lies, it can be turned over quite easily.

Presuming the carcase lies on its side, make a mark with charcoal around the neck to show the amount of neck required. The elephant has a short neck, and too much skin is not wanted.

After cutting through the neck skin, make an incision along the centre of the chest and throat through the point of the lower lip, and another cut from inside of the mouth along the palate and along the underside of the trunk up to the tip, and remove the skin to the level of the ground.

The head will now have to be severed and turned over, to skin the side resting on the ground.

To do this, all the flesh between the point of the shoulder and the head must be cut away in junks, the vertebrae chopped through with an axe, and more of the flesh removed, when the head can be rolled over, and the mask detached from the skull in one entire piece.

The mask is then spread out, and all the men available put on to flesh it. The skin in parts, especially at the back of the neck, will be very thick, but the skin of the trunk is thin. There will be some difficulty in skinning the ear, as the thin skin clings to the cartilage and has to be skinned out. This is easier done when the skin is fresh than when the alum and salt has hardened the skin tissues. However, remove as much as possible of the cartilage. While fleshing the mask it is advisable to sponge it with carbolic solution, which not only keeps the pelt sweet but keeps away flies, for there is no place like the jungle for flies. If the fleshing has been properly done there will be no difficulty whatever in preserving the mask.

WILD SHEEP

In all wild sheep masks the skin is very thin, except behind the ears and back of neck. In treating these masks remove all the flesh from the lips, base of ears and other parts. The back of the ear must be skinned to the tips. If 'hillalled,' the cut should be sewn up neatly. Arsenical soap or carbolic solution may then be applied to the flesh side. The mask should be stretched, and fixed to a frame

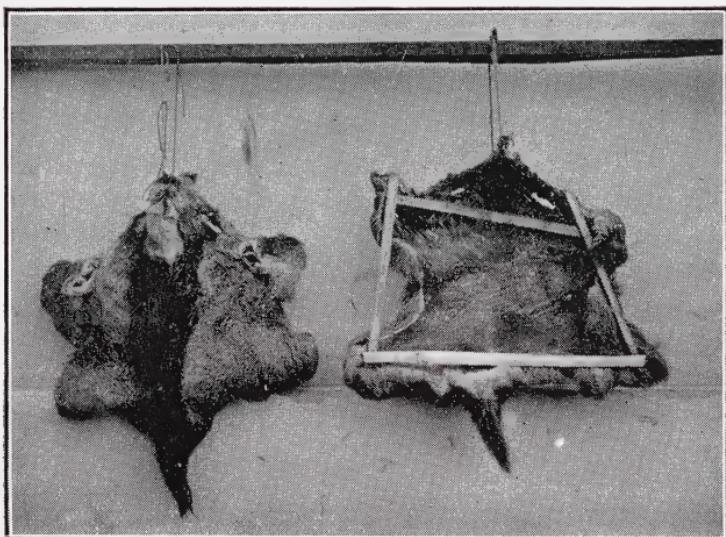


FIG. 15

DRYING MASKS OF LIGHT WEIGHT

of sticks, *vide* Fig. 15, and kept suspended, when the wind will dry it rapidly.

Blood on the hair of wild sheep must not be washed off. It can be removed with ashes. A sufficient quantity is placed on the part, and worked and rubbed in till it reaches the roots of the hair and absorbs the moisture. It is then dusted out, and the same process repeated till the hair gets fluffy and practically dry.

A large percentage of Wild Goat and Wild Sheep masks

we get are 'hillalled.' This, however, will not spoil the masks if properly done. All the hair on the throat, especially in Markhor, Thar, and Oorial must be turned back towards the chin, and the gash made where the roots of the hair are exposed. When the long hair on the throat is cut it is difficult to make good the damage.

The incision for muntjac runs the same as any other horned head, i.e. from the back of the base of the pedicel, then along the back of the pedicel up to the base of the horn and then, of course, round the base of the horn.

Stretching Skins

A freshly stripped skin, which is full of elasticity, will naturally stretch longer and wider than the animal from which it has been removed, but there is a limit to the stretching. If you pull a 9 ft. tiger out to 12 ft. or a 7 ft. panther out to 9 ft., you cannot expect to get a proportionate width. This is a common mistake. If the skin has not been over-dried, it is possible with a good deal of labour and risk to get it into some shape. If, however, the skin is kept the length the animal was in life, then pulled square, the neck disappears and the mask sinks into the shoulders. A skin like this cannot be pulled into correct shape.

We often receive skins of tiger, panther and bear, in which the mask is not opened out (the incision stopping at the throat instead of cutting right through the chin), but turned inside out and stuffed with straw. *Vide* Figure 16. This method of drying invariably results in the skin of the body being stretched square, out of all shape, and while the mask is drying it is not possible to see what is happening to the ears—a very important point, as they take longer to dry, and from which the hair soon slips if they are not aired, and consequently the mask is ruined.

All skins which are to be pegged out and dried must have the mask opened out—that is, the incision should extend right through the chin—and stretched flat.

When stretching, the skin should be pulled just taut enough to remove all folds, and care must be taken that the length and width are in proportion.

When stretching tiger and panther skins, do not hold the tail. Peg out the mask first, taking care to keep the lower lip wide. Then hold the skin on either side of the base of the tail, pull the skin taut, and nail down.



FIG. 16

The hindlegs are next done, and then the forelegs, and finally the sides. The tail should be done last.

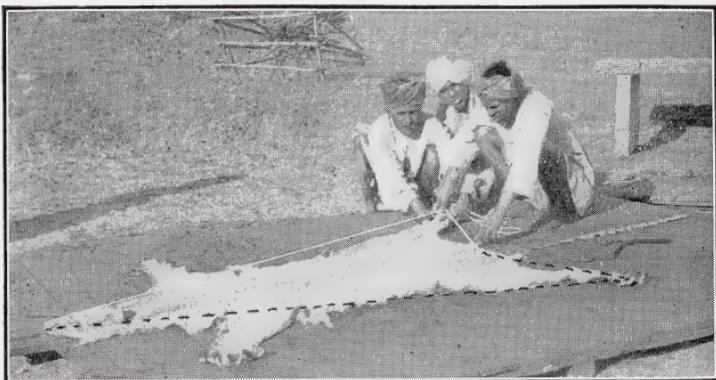


FIG. 17

Figs. 17 and 18 will explain how skins can be pegged out symmetrically with the aid of a string, when one leg cannot be pulled out longer than the other.

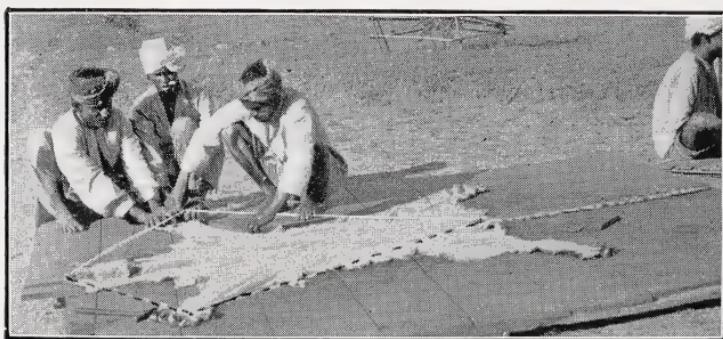


FIG. 18

Do not on any account use bamboo pegs, as they make large and unsightly holes; 3" wire nails should be used.

Entire Specimens

In all specimens which are to be mounted ENTIRE the skin should on no account be stretched. It is often impossible to mount a tiger ENTIRE when the skin has been pulled out of all shape and dried.

Knives

The sportsman should always provide himself with suitable skinning knives. A knife with a short thin handle is an abomination. English cutlers have no idea whatever of what a good skinning or shikar knife should be. The knives sold as 'hunting knives' are only fit for lopping off branches. All English-made knives are also too highly tempered.

We give an illustration of the knives most suitable for skinning. Fig. 19, No. A, is a butcher's knife, which is sold

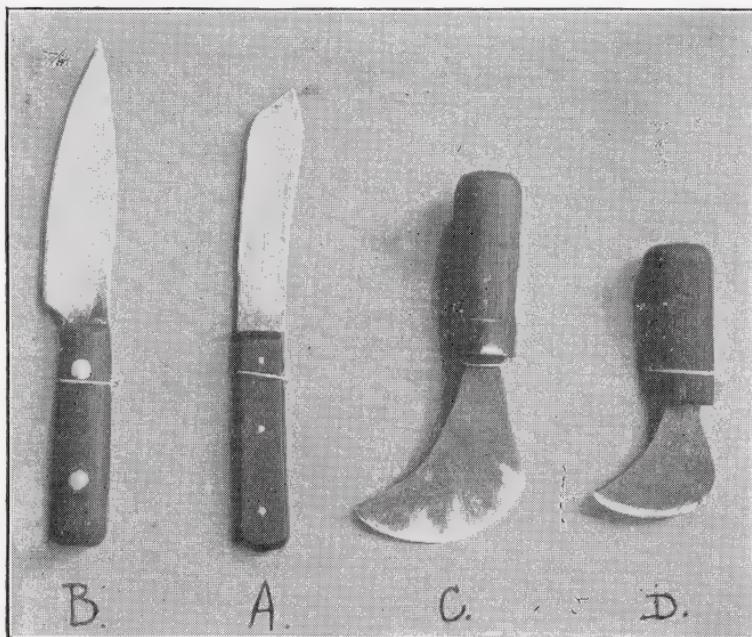


FIG. 19

by all hardware merchants. One with a blade of 5 to $5\frac{1}{2}$ inches is most handy for flaying. They are made in all sizes. B has a pointed blade. This knife is very necessary for making the incisions, also skinning pads. Knives of this shape are made and sold as 'French Cook's Knives,' the handles, however, are very thin and small, but could be wrapped over with tape to make up the correct thickness. The other two are the Indian chamar's fleshing knives, the 'Rampee,' No. C, is the most useful size. No. D is meant for skinning elephant feet. Blade of C $3\frac{1}{2}$ inches, D $2\frac{1}{2}$ inches.

Any village blacksmith will make these knives. To avoid mistakes the size and shape should be cut out in tin and given to the man. The knives are made of old smooth files, which can be purchased in the bazaar, and when finished the simplest way of tempering is with horn. The blade is heated dark cherry red, and worked slowly across a sheep or buck horn till it burns itself about $\frac{1}{2}$ inch into the horn and cools, the blade will then take a razor edge.

The entire length of the knives A and B need not be sharp —about 2" from tip is sufficient. Two stones are necessary. One, a carborundum with a face of coarse grain for putting on an edge when the knife is very dull through scraping bone, the other should be of very fine grit, to put a keen sharp edge on to the knife, as nothing is more trying than a blunt knife.

Drying Skins in the Hot Sun

Fresh skins and masks ought never to be dried in the hot sun. They may look all right for the time being, but such skins go into pulp when relaxed.

There is such a thing as 'partial burn,' when the pelt becomes hard and transparent like horn; in course of handling all these parts break to pieces. This is generally caused by the carcase lying out in the hot sun, or by grease.

A FRESHLY KILLED ANIMAL should not be allowed to lie out in the hot sun. If the animal is too heavy to be carried into the shade, it must be covered over with branches—not smothered with green grass—till it can be attended to.

Processions

Sportsmen often allow their tigers and panthers to be carried out in procession to please the beaters, and wonder why parts of the skin are burnt by the hot sun. Even pegging out on the hot ground is quite sufficient to ruin a skin.

The Chamar

Every village has its chamar. They are very low *jat* Hindus. All the cattle in a village that die of old age or disease or are killed by tiger and panther are their perquisites. They are cobblers, tanners and dealers in raw hides on a small scale.

To the sportsman the chamar will be of much use, for not only is he an expert at skinning, but also with the rampee, the Indian fleshing knife.

The first thing a sportsman should do on getting into camp is to engage a chamar, either for helping to tie out baits or as a camp cooly, and not wait till he has killed a tiger and then send post haste for him, when he may not be found.

Although the chamar is the best man you can obtain to help in preserving your trophies, leave nothing to his tender mercies. Like most of the men the sportsman employs, the chamar also has a little tired feeling. He should work under strict supervision, otherwise he will treat your tiger skin in the same rough and casual manner as he does his cow hides. This, of course, refers to the chamar picked up in any odd village. There are men who know their work, but they are few and far between.

CHAPTER III

SKULLS AND SKELETONS

The quickest way to clean tiger, panther or any small skulls which have to be mounted with the mask, is to cut away all the flesh, scoop out the brain and eye-balls, and boil till the flesh gets soft. Care should be taken that this is not overdone, or the skull will go to pieces.

With tiger, panther and bear, the skull should remain in the liquid till cool, and ought never to be plunged into cold water when hot, as this is one of the principal causes of the canines chipping.

In young tigers and panthers, the canines are hollow, and only get solid with age, and when rapidly cooled there is a considerable amount of contraction, and the canines split in two from end to end very soon.

With Black Buck and Chinkara heads there should be just sufficient water in the vessel to cover the bone, as the horns do not require boiling. The horns will come away a few days later, when the tissues inside the horn decompose. The core should then be cleaned and arsenical soap applied to the inside of the horn, and the skull bone kept aired to remove all unpleasant smell from the core.

With the exception of elephant, bison and buffalo, no other skull should be buried, as earth soon destroys and discolours the bone and also loosens the sutures. With tiger, panther and bear all the small teeth get lost.

Elephant skulls which are to be mounted, must, of course, be buried. The pit should be just deep enough to cover the skull, the tusks being exposed. It will take, perhaps, a week for the marrow inside the tusks and the tissues in the tusk sockets to decompose. When pulling on the tusks, if it is found they are loose in their sockets, they can be worked about and lifted right out.

The skull will have to remain buried and the soil watered frequently for another four weeks, when it may be taken up and the bone washed clean, and another two weeks of sun and wind will be required to remove any smell.

Bison and buffalo heads should not, if possible, be buried with the horns, as earth has a corrosive action on horn and destroys the surface quickly, and also bleaches the horn.

The skulls are roughly cleaned, including brains and eye-balls, etc., and dried under a tree. In a week or ten days the horns will be in a condition to come off. Cut and remove the thick skin under the horn on the forehead, and pass the point of the knife between the thin edge of the horn and bone at the back, then place the side of an axe or edge of an iron tent peg against one of the corrugations of the horn, and one or two blows with a large hammer or stone will knock the horn off, after which the bone is buried. Arsenical soap should be applied to the inside of the horn.

There is a tiny buff-coloured moth which specializes in bison horns. The larvæ get inside, and finally eat their way through the horn. They increase and multiply rapidly, and the horns are often destroyed in a few months. Arsenical soap is the only preventative.

Bison and buffalo heads should never be placed in a stream, with the mistaken idea that thousands of small fish will eat all the flesh and thus clean the bone quickly. Before the thousands of fish do what is expected the horns get bleached and are quite ruined ; even Sambur and Chital horns become white.

We occasionally receive Sambur and Barasingh heads in which the horns have been sawn off with the object of economising freight. When this is done the trophy is absolutely ruined, for it is impossible to fix the antlers in position again correctly.

Skulls to be mounted in the bone must not be boiled as the boiling not only drives the grease into the bone, but the sutures get weak and the skull does not stand the amount of soaking necessary to clean and bleach it.

Skulls should not be boiled until all the flesh, eye-balls and brains have been removed, as fat makes the bone greasy and nasty.

Skeletons

For all specimens to be mounted ENTIRE the entire skeleton must be saved. It does not require skilled labour to skeletonise an animal. If properly instructed, two coolies can do a tiger in six hours at most. All the flesh is cut away, and the bones are left attached by their ligaments and not separated. The front legs with the shoulders blades must be done separately, as they are not attached to the skeleton.

After the skeleton is treated with arsenical soap and kept aired for 24 hours in the shade, all the flesh not removed will dry to a certain extent, when the coolies should go over it and remove whatever flesh still remains, *vide* Fig 20. The skeleton is then painted over again thoroughly with arsenical soap, and allowed to dry.

With small mammals, such as wild cat, monkey, etc., unless the entire skeleton is preserved, it will not be possible to mount them successfully.

Skeletons must be dried in the shade. When dried in the hot sun the grease exudes, making it unpleasant and messy.

A partially cleaned skull, in which the brains have not been removed, ought never to be wrapped up in its mask or skin for despatch, as the brains soon get putrid and exude on to the pelt and, wherever the putrid brain touches the pelt, bacterial action sets in and hair slips.



FIG. 20
COMPLETE SKELETON OF PANTHER

CHAPTER IV

PRESERVATIVES

Salt	Arsenical Soap
Alum	Atlas
Pickle	Wood Ash
	Carbolic Acid

SALT

No bacterial action can take place in the absence of moisture. There is nearly 70 per cent. of moisture in fresh skins, and salt removes all this moisture quickly and crystallises in the fibres, giving no room for bacterial action.

A very important fact regarding SALTING is that dried skins, which contain salt, soak back quickly and evenly, and are practically as soft and elastic as when fresh. Skins in this condition are soon cured, and the results are all that can be desired.

It is just the reverse with skins cured and dried without salt. The thin parts, viz., the sides and hindlegs, relax first, while the rest of the skin remains as hard as a board. Skins in this condition are most difficult to handle, for although relaxed in strong antiseptic solutions and safe from bacterial action, the soaking cannot be continued without risk, and the results are that such skins take several weeks before they are in a fit condition to start curing. (In Sloth Bear, especially if the grease has been absorbed by the pelt, it often takes months.)

ALUM

Alum is a strong tanning agent. When used alone on fresh skins it is of no value whatever; but when combined with salt it strikes through the pelt and fixes the hair roots very quickly, and in 24 hours the skin is practically tanned.

PICKLE

To every two-gallon petrol drum of water add 6 lbs. of finely-powdered salt and 4 lbs. of finely-powdered alum. Dissolve the salt first by stirring, till nothing of it is left, then add the alum, and continue stirring till there is no residue.

The quantities of alum and salt given is the minimum, and should not be made less.

Two gallons in a small tub should be sufficient for a panther skin. It is not possible to say what quantity of liquid is necessary for a tiger or a bear. It just depends on the size of the tub. The larger the tub the better, as the skin can then be arranged with as few folds as possible. A bear will require more liquid, as the long hair takes it up.

There should be plenty of liquid for the skin to float in. If insufficient, and the skin is pressed down, the liquid cannot get into the folds, and will result in hair slipping.

When several animals are likely to be bagged during the shoot, it is a good plan to keep a sufficient quantity of pickle in a large zinc tub, and the skins can go into it as obtained.

As the skins get cured and removed the pickle will, of course, get weak. Fresh alum and salt must be added to keep up the strength.

Pickle is most effective when freshly made, when strong it has a slimy feel.

CARBOLIC

There are several antiseptics used for raw hides. We shall deal with carbolic acid only, as it is the best and is most suitable.

Carbolic acid is made in different grades, e.g., No. 1, a refined quality, in crystals, is sold in 1 lb. bottles.

The other numbers are all commercial qualities. Some are thick and black, and float on water like oil, and have to be dissolved in boiling water, and take much time and trouble before dissolving properly.

No. 5, which is of pale straw colour, mixes readily in cold water, but it has to be fresh stock, as after a year it gets

thick and discoloured and subject to the same troubles as the other numbers. One is never certain what bazaar chemists will sell, so we think it is advisable to get No. 1, the refined quality. A bottle will go a long way and only costs Rs. 2. The solution may be kept ready mixed in an empty oil or petrol can. It should, of course, be dissolved in hot water. The strength is :

One bottle carbolic No. 1 to 24 bottles of water, or 4 ozs. carbolic to 6 bottles of water.

This solution can be diluted as required.

To keep a skin sweet while fleshing this solution is mixed with an equal volume of water.

ARSENICAL SOAP

Arsenical soap consists of equal parts of soap, whiting or chalk powder and white arsenic.

Arsenic is sold in the bazaar in big lumps, and has to be powdered. It is insoluble in water, so the finer the powder is made the more effective will the preservative be. It must be passed through a fine muslin sieve more than once, and the extra labour spent in reducing it to impalpable powder is not time wasted.

Shred the soap and boil with sufficient water till dissolved, then stir in the whiting, and lastly the arsenic.

ATLAS

Atlas, a patent preservative, is some form of arsenic dissolved. It is used exclusively in the hide trade and is an excellent preservative. Freshly stripped goat skins are dipped in vats containing one part Atlas in twelve parts water, and just thrown over a beam to drain and dry. There are specially built sheds for this purpose, and many hundred of skins are handled at a time. After they have been through the Atlas and been arranged on beams in the shed no further attention is paid to them till dry. The pelts dry hard and black, with no unpleasant smell whatever, and are insect and rat proof.

Atlas, however, has one great drawback. It makes the pelt very hard and brittle. This is of little consequence

with goat skins, which have to be depleated, but it is a very different matter with valuable fur skins. To obviate this, mix powdered salt with Atlas solution till it is the consistency of paste, and apply to the flesh side.

WOOD ASH

We must emphasise that wood ash is not a preservative. It is only an absorbent, and extracts grease and moisture from the pelt.

CHAPTER V

APPLICATION OF PRESERVATIVES

SALTING PROCESS

After fleshing the skin thoroughly and skinning the lips and ears, apply sufficient finely-powdered salt, mixed with a little water to make it pasty, evenly over every part of the pelt right up to the edges, and keep the skin spread to be aired, and it will be found in about 12 hours' time the salt as brine will have struck through, and all the thin parts, such as the hindlegs and belly, will become quite hard, and in another 12 hours, depending on the thickness of the pelt, the skin will be practically salted, and may be kept in this condition till quite dry.

The above refers to the hot weather. During the Monsoons, when the air is charged with moisture, the skin will not dry as quickly. After about 24 hours or so, when all the salt applied has become liquid, it should be scraped off with a knife and fresh salt applied. As long as the salt has struck through the pelt there is no fear whatever of hair slipping, even if the pelt remains moist for several days. If camp has to be struck, salted skins may be folded up and kept in bamboo baskets, and aired and dried when the opportunity occurs.

We give here the minimum amount of salt which is necessary for salting:

A large TIGER skin ..	..	..	16 lbs.
TIGRESS skin ..	..	..	11 lbs.
A large Male PANTHER skin ..	..	..	7 lbs.
A large Male SLOTH BEAR skin ..	..	..	11 lbs.

Carbolic solution, if mixed with the salt, would be much safer.

ALUM, SALT AND CARBOLIC

This is the safest and simplest process, and the one we recommend. Equal parts of finely-powdered alum and salt

are mixed with sufficient 2 per cent. carbolic acid solution to make it pasty, and spread on the flesh side as in salting. No further attention need be paid to the skin, and in a few days' time it will be dry and thoroughly cured. For a large TIGER mix

8 lbs. finely-powdered ALUM

with 8 lbs. " " SALT

and make into a paste with carbolic solution. The carbolic, which is first dissolved and made up as a 4 per cent. stock solution, should be mixed with an equal quantity of water, or it will burn the hands when the paste is being applied.

Skins cured with alum and salt, or even pickle, need not be stretched. There will, of course, be considerable contraction, but this does not matter in the least, as the skin when relaxed will stretch to its original size.

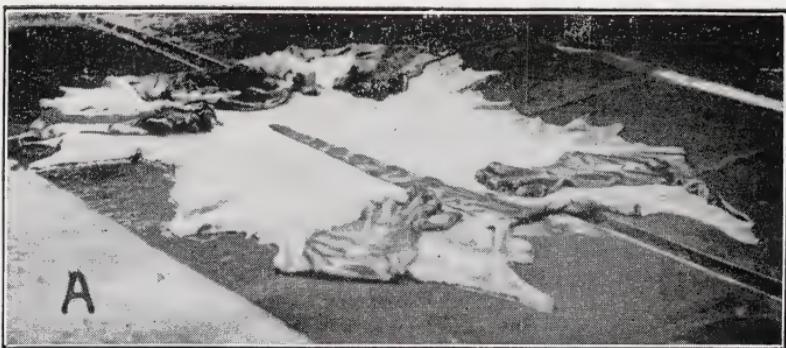
PICKLE

Before placing the skin in pickle spread equal parts of finely-powdered alum and salt all over the flesh side, and fold as in illustrations A, B, C, Fig. 21, and press the bundle into the liquid till all air in the folds is expelled, otherwise part of the skin will float on the surface.

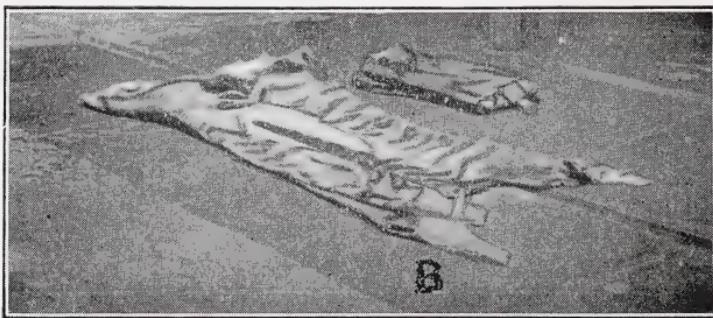
After about 3 hours the bundle should be opened in the pickle, to make sure the solution gets to every part of the pelt.

If the pickle has been correctly made and the instructions given carried out, in 24 hours the pelt will become quite stiff and the skin contracted to a considerable extent.

The skin is then removed and drained and all the crystallised alum and salt washed off from both sides. It is then spread on the ground flesh side up, when the chamar sits in the centre of the skin, and, holding the edges with his left hand, with a blunt rampee, or a 3" strip of deal from one of the packing cases, he pushes out all the folds and wrinkles, after which he does the fleshing. He generally has a smooth round stone for the purpose, but a smooth plank will do just as well, and, beginning from the mask, he cuts the skin down to a uniform thickness, and removes several pounds of fleshing as alum swells the pelt. After



SALTING SKINS



SALTING SKINS



SALTING SKINS

the fleshing has been done you can see at a glance the parts that are thoroughly cured—they will be perfectly white. The skin then goes into pickle for another 24 hours, after which it may be thrown across a bamboo and allowed to dry. Fig. 22 shows the correct way to drain a skin.

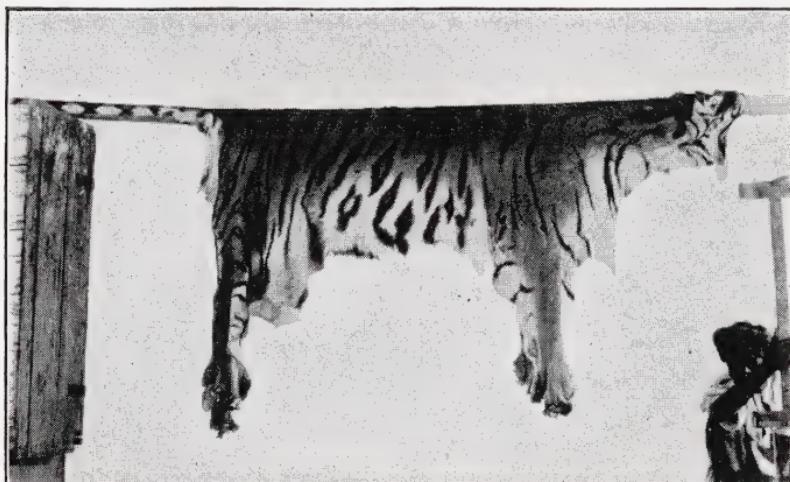


FIG. 22

ARSENICAL SOAP

After pegging the skin out without any folds whatever, apply the arsenical soap with a large brush to every part of the flesh side. The soap should be made quite thin with water. It is a mistake to smother the skin with thick arsenical soap, as it forms a film and prevents the moisture in the skin from evaporating quickly.

CARBOLIC ACID

is applied in a similar manner to arsenical soap. The skin must be watched very carefully. The carbolic acid solution, which must be 4 per cent. strength, should be applied several times to the parts that remain moist. It ought to be applied with a mop of rags tied to the end of a stick, otherwise it will burn the hands badly.

It is most essential that skins treated with arsenical soap or carbolic acid should be kept well aired till thoroughly dry, and should not be lifted before this.

WOOD ASH

Nice clean wood ash must be used and well rubbed into the pelt. The rubbing has to be done across the skin, which will displace and tear up the parchment and flesh, which then can be either pulled off or removed with a knife. The rubbing with ashes must be continued, especially along edges of the skin, till the pelt is absolutely clean, and as the ash catches up the grease and moisture it should be scraped off with a knife and the rubbing continued. It may perhaps take several hours or several days, but if properly done the skin dries clean and without any unpleasant smell whatever.

When the rubbing has to be stopped for a time all the ash should be dusted off, to allow the moisture in the skin to evaporate.

Wood ash is of use only when the weather is hot and dry, and is of no value whatever during the Monsoons.

Like skins treated with arsenical soap and carbolic, the skin must not be lifted till thoroughly dry, and when removed the hair side should be aired before packing.

Skins to be treated with wood ash, arsenical soap or carbolic must be stretched and pegged down, no matter how small they are—even Red Squirrel. Otherwise it would be just wastage of time to do them, and the more evenly they are pegged out the better.

If the reader thinks of curing bison, buffalo and nilghai masks with wood ash, he may just as well throw them away.

As taxidermists, we naturally dislike the use of wood ash; the large percentage of skins and masks which go bad every season are due to the injudicious use of wood ash, and we fail to see why wood ash should be used when there are so many other methods which are time and labour saving, and the results all that can be desired. We have no patience with the man who goes on a big shoot with no preservatives, and makes this an excuse for using wood ash.

If a wood ash cured skin accidentally gets thoroughly wet in a shower of rain, do not try to dry it back with wood ash, or all the hair will come away. Apply powdered salt mixed with a little water or carbolic solution to the relaxed parts, and keep the skin aired till the salt strikes through and hardens the pelt. The same applies to skins cured with carbolic or arsenical soap.

No matter how wet skins cured with alum and salt, or salt only, become, no damage will be done. All that is necessary is to apply some more preservative to replace what the rain has washed off.

As already stated, skins cured with pickle or alum and salt will not dry during the rains, but there is nothing to worry about, and if properly done may keep moist for several weeks, but do not smother them with wood ash to hasten the drying. The skins could be packed in bamboo baskets and despatched to the taxidermist in the moist condition.

Burnt Alum

In all out-of-date books on taxidermy, 'burnt' alum is strongly recommended. What special properties burnt alum possesses over unburnt alum, we fail to see. Sportsmen often use burnt alum mixed with wood ash, and, of course, the burnt alum gets the credit of curing the skin, when, as a matter of fact, it is the rubbing of wood ash which removes the moisture and dries the skin. As we have already explained, alum, burnt or unburnt, cannot strike through the pelt of a fresh skin unless used in conjunction with salt.

Saltpetre

Saltpetre ought never to be used, as it is almost impossible to remove all traces of it from the finished skin, and the cause of all bazaar-cured skins perishing so quickly is due to the use of saltpetre.

Bison Hides Salting

During every season we get several fresh bison hides, and as we do not handle bison hides we have to return them to the owners, or send them to a tannery, and before doing so we have to preserve them or they would go bad.

The hide is spread out in a shed, and about 20 lbs. of powdered salt, mixed with carbolic solution, is applied to the flesh side, and no further attention is paid to it till it begins to dry hard, when it is folded up and despatched. This proves the utility of salt, as a bison hide is quite an inch thick in parts, and much thicker than any other hide, except elephant.

Crocodile and Snake

To preserve these skins for leather ALUM ought never to be used. Salting is sufficient, or they may be dried with wood ash. The same applies to Sambur hides which are to be converted into leather.

CHAPTER VI

PRESERVATION OF MASKS

ELEPHANT

We shall begin this chapter by describing how to preserve the mask of a large tusker.

We have already explained how the skinning has to be done. We will assume the mask has been thoroughly well cleaned of all flesh, and, by the liberal use of carbolic acid solution, there is no sign whatever of taint, and, if the simple instructions given are carried out, the mask, although it is of the largest animal in existence, will be no more difficult to preserve than a bison or buffalo mask.

If the cartilage of the ear has been completely removed, there will be no trouble whatever, but most probably this will not be done, for the edges of the ear are very uneven and there will be a good deal left not skinned. However, invert the ear and pull it out towards the flesh side of the mask. Put plenty of finely-powdered alum and salt, mixed with carbolic, into the sack of the ear to preserve the parts of the ear not skinned. Next spread finely-powdered alum and salt, mixed with carbolic or Atlas solution, about half an inch thick over every part of flesh side, right up to the edges, and no further attention will be necessary.

In a case like this grass sheds should be built over the masks, to protect them from the rays of the hot sun.

The elephant pelt will begin to get stiff very soon—in about four or five days—depending on the weather and the amount of wind, as wind will dry a mask very quickly. The mask is turned over for just a day for the hair side to be aired, and in a week's time it should be dry enough to be folded into a small bundle for transport. If allowed to get bone dry the folding will be very troublesome.

BISON MASKS

can be cured in pickle, just as described for tiger skins. After 24 hours the mask is removed and fleshed quite thin

by the chamar, and put back in pickle for another day or two. The mask is then removed and placed on a thick bamboo to drain and dry, *vide* Fig. 23; small sticks are

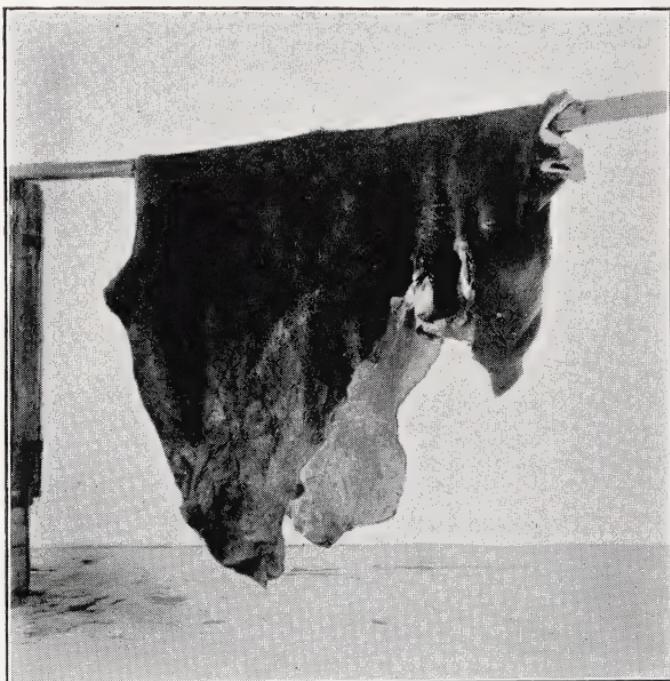


FIG. 23

placed inside the neck skin and mask to keep the sides apart, which will facilitate the drying.

Arsenical soap is not suitable for Bison or Buffalo masks—and with carbolic acid, means endless time and watching, and is not worth it. The only way to cure bison and buffalo masks successfully is with pickle.

CUTTING OF MASKS

When cutting off bison masks the length in front, measured from chin along the curves to the chest, should

not be less than 3' 9", and the skin at the back of the neck, measured from top of the head along the curves, not less than 2' 4". Too much skin is not necessary, as it only means extra trouble in curing, but if cut too short the head cannot be mounted. Bison and buffalo heads never look well mounted with short necks.

In the case of big masks plenty of skin at the back of the neck should be left, otherwise it is difficult to display the bristles.

PIG MASKS

are difficult to cure, owing to the amount of fat in the pelt. These masks must be cured like those described above. To save time it would be advisable to fill the mask with 6 or 8 lbs. of powdered salt and carbolic solution, and despatch to the taxidermist at once. Salted skins do not absorb fat, as salt has a hardening effect on fat.

ELEPHANT FEET

To skin elephant feet do not make an incision behind, for if this incision is made, no matter what the seam is made with, the foot soon gets out of shape. The extra trouble of removing all the bones inside the foot without making the incision is well worth it, for the foot will remain in shape a lifetime.

The inside of the elephant foot consists of large and small bones arranged like a pack of bricks, and all these bones have to be removed one by one. The chamar knife, Fig. 17, D, is a special tool for this purpose, as it can be utilised where a knife will be of no use. Being short, it is worked below and between each bone, and the grizzle-like ligaments and sinews cut through with ease, and all the bones can thus be easily removed in this manner sooner than in any other way. The bones in the toe nails cannot be removed till some days later, when the delicate tissues which hold them decompose.

BISON AND BUFFALO LEGS

Make an incision along the back of the leg till the slots are reached, then cut in between the slots, so that when the

leg bones are removed the skin, with slots attached, will lie flat. By doing this it makes it easy to work on the bones inside the hoofs, which should be removed entirely. This, however, cannot be done in one operation, as the tissues in the bones must decompose before all the bones can come away. But as much as possible should be cut out, and the knife worked well in between the bones and the horny portion, to allow the preservative to enter and act on that part of the leg where the skin and hoof meet.

Fig. 24 shows the hoof and the skin of a bison leg, and the small bones in the slot which have to come away.



FIG. 24

Some Press Opinions on our Illustrated Notes on the Preservation of Shikar Trophies

' . . . contains a fund of information . . . should prove of utmost value and interest to all sportsmen and naturalists.'

—*The Englishman.*

' . . . the matter has so clearly been dealt with that we wonder how so much valuable information could be compressed within such a small compass.'

—*The Times of Assam.*

' . . . we strongly advise all sportsmen to possess themselves of this admirable little book.'

—*The Journal of the Bombay Natural History Society.*

' . . . a most useful handbook.'

—*The Rangoon Times.*

'We have not seen a more useful booklet on the preservation of shikar trophies. It is one which should be invaluable to every sportsman. After careful perusal of its pages one is astonished at the vast amount of detail there is to learn. The information in this book is set out so that every one can understand it very simply.'

—*The Illustrated Weekly of India, Bombay.*

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